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D212-664-201TRN
Job Sheet 198233



Part No: D212-664-201TRN

Job Qty: 1 pcs

Part Name: Crosstube Turning Detail



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 7/24/19

Job Tracking No:

Created By: Marie Lajeunesse

Due Date: 8/7/19

Description:

Note: D212-664-241 REV E IPP Rev:A 08-03-06 new issue DD verified by:ec IPP Rev B 08.04.02 Removed polish EC verified DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Lead Time	DAS	Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier				
100	Mori Selki TL-40 - 1	1 pcs	8/7/19	8/7/19	1.00	1.33	Mori Selki TL-40 - 1				
110	QC 2	1 pcs	8/7/19	8/7/19	0.00	0.00	QC 2 - 1				
							QC 2 - 12				
							QC 2 - 14				
							QC 2 - 17				
							QC 2 - 19				
							QC 2 - 2				
							QC 2 - 20				
							QC 2 - 22				
							QC 2 - 23				
							QC 2 - 25				
							QC 2 - 32				
							QC 2 - 33				
							QC 2 - 35				
							QC 2 - 39				
							QC 2 - 4				
							QC 2 - 40				
							QC 2 - 44				
							QC 2 - 45				
							QC 2 - 48				
							QC 2 - 49				
							QC 2 - 50				
							QC 2 - 51				
							QC 2 - 52				
							QC 2 - 57				
							QC 2 - 62				
							QC 2 - 63				
							QC 2 - 8				
							QC 2 - 66				
							QC 2 - 64				

Plex 7/24/19 8:39 AM Dart.lajeunesse.marie

					QC 2 - 65	
					QC 2 - 5	
					QC 2 - 71	
					QC 2 - 73	
					QC 2 - 69	
120	Mori Seiki TL-40 - 1 - B4B	1 pcs	8/7/19	1.00 1.33	Mori Seiki TL-40 - 1 - B4B	DAS 662019-08-07 9-89
130	QC 2	1 pcs	8/7/19	0.00 0.00	QC 2 - 1	
					QC 2 - 12	
					QC 2 - 14	
					QC 2 - 17	
					QC 2 - 19	
					QC 2 - 2	
					QC 2 - 20	
					QC 2 - 22	
					QC 2 - 23	
					QC 2 - 25	
					QC 2 - 32	
					QC 2 - 33	
					QC 2 - 35	
					QC 2 - 39	
					QC 2 - 4	
					QC 2 - 40	
					QC 2 - 44	
					QC 2 - 45	
					QC 2 - 48	
					QC 2 - 49	
					QC 2 - 50	
					QC 2 - 51	
					QC 2 - 52	
					QC 2 - 57	
					QC 2 - 62	
					QC 2 - 63	
					QC 2 - 8	
					QC 2 - 66	DAS 662019-08-07 9-89
					QC 2 - 64	
					QC 2 - 65	
					QC 2 - 5	
					QC 2 - 71	
					QC 2 - 73	
					QC 2 - 69	
140	QC 8	1 pcs	8/7/19	0.00 0.00	QC 8 - 12	
					QC 8 - 14	
					QC 8 - 17	
					QC 8 - 20	
					QC 8 - 25	
					QC 8 - 3	
					QC 8 - 32	
					QC 8 - 33	
					QC 8 - 35	
					QC 8 - 39	
					QC 8 - 4	
					QC 8 - 44	
					QC 8 - 45	
					QC 8 - 49	
					QC 8 - 58	
					QC 8 - 8	
					QC 8 - 9	
					QC 8 - 68	
					QC 8 - 67	RR/GD 19-08-20

					QC 8 - 1 (A)	
					QC 8 - 47	
					QC 8 - 40	
					QC 8 - 52	
					QC 8 - 23	
					QC 8 - 57	
145	Crosstubes - 2 - B4B	1 pcs	8/7/19	0.00 0.25	Crosstubes - 1 - B4B	
					Crosstubes - 2 - B4B	5B 2/20/2019
					Crosstubes - 3 - B4B	5B 19-08-20
					Crosstubes - 4 - B4B	
150	Crosstubes - Bend - 2 - B4B	1 pcs	8/7/19	0.50 0.25	Crosstubes - Bend - B4B	5B 19-08-20
160	QC 7	1 pcs	8/7/19	0.00 0.00	QC 7 - 10	
					QC 7 - 13	
					QC 7 - 14	
					QC 7 - 15	
					QC 7 - 17	
					QC 7 - 18	
					QC 7 - 19	
					QC 7 - 2	
					QC 7 - 28	
					QC 7 - 3	
					QC 7 - 30	
					QC 7 - 34	
					QC 7 - 36	
					QC 7 - 37	
					QC 7 - 41	
					QC 7 - 47	
					QC 7 - 48	
					QC 7 - 51	
					QC 7 - 58	
					QC 7 - 59	
					QC 7 - 60	
					QC 7 - 9	
					QC 7 - 68	
					QC 7 - 50	
					QC 7 - 67	
					QC 7 - 40	
					QC 7 - 24	
					QC 7 - 43	
					QC 7 - 61	
					QC 7 - 81	
170	Packaging 3-1 - Stock - B4B	1 pcs	8/7/19	0.00 0.00	Packaging 3 - 1 - B4B	
					Packaging 3 - 2 - B4B	
					Packaging 3 - 3 - B4B	
					Packaging 3 - 4 - B4B	
					Packaging 3 - 5 - B4B	
					Packaging 3 - 6 - B4B	
					Packaging 3 - 7 - B4B	
					Packaging 3 - 8 - B4B	
					Packaging 3 - 9 - B4B	
					Packaging 3 - 10 - B4B	
					Packaging 3 - 11 - B4B	
					Packaging 3 - 12 - B4B	
					Packaging 3 - 13 - B4B	
					Packaging 3 - 14 - B4B	
					Packaging 3 - 15 - B4B	
					Packaging 3 - 16 - B4B	
					Packaging 3 - 17 - B4B	
					Packaging 3 - 18 - B4B	

				Packaging 3 - 19 - B4B	
				Packaging 3 - 20 - B4B	
				Packaging 3 - 21 - B4B	
				Packaging 3 - 22 - B4B	
				Packaging 3 - 23 - B4B	
				Packaging 3 - 24 - B4B	BB 8/27/2019
				Packaging 3 - 25 - B4B	
				Packaging 3 - 26 - B4B	
				Packaging 3 - 27 - B4B	
				Packaging 3 - 28 - B4B	
				Packaging 3 - 29 - B4B	
				Packaging 3 - 30 - B4B	
				Packaging 3 - 31 - B4B	
				Packaging 3 - 32 - B4B	
				Packaging 3 - 33 - B4B	
				Packaging 3 - 34 - B4B	
				Packaging 3 - 35 - B4B	
				Packaging 3 - 36 - B4B	
180 QC 21 - SA	1 pcs	8/7/19	0.00 0.00	QC 21 - SA - 21	
				QC 21 - SA - 70	
				QC 21 - SA - 53	AUG 27 2019

Part Op 100 - Mori Seiki TL-40 (Mori Seiki CNC Lathe Large) 1-Fill tube with sand & install plugs DT8534 on both ends as per Descriptions: Folio FA114 2-Turn first side as per Folio FA114

110 - (QC2- Inspect parts off machine FAI/FAIB)

120 - Mori Seiki TL-40 (Mori Seiki CNC Lathe Large) 1-Turn second side as per Folio FA114

130 - (QC2- Inspect parts off machine FAI/FAIB)

140 - (QC8- Inspect parts - second check)

145 - (Crosstubes) GRIND ONLY TRANSITION LINES SMOOTH LONGITUDE WAY.

150 - Crosstubes) 1- handfinish X-TUBE INSIDE AND OUT

160 - (QC7-Inspect Chemical Conversion Coat)

170 - (Identify as per dwg & Stock Location: _____) Identify and stock in kanban rack Location: _____

180 - (QC21- Final Inspection - Work Order Release)

Job BOM				
Part / Item	Component Name	Quantity	Operation	Container
D6006-129	Crosstube Material	1 pcs (1 ea)	100-Mori Seiki TL-40 - 1	F123967

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
100-Mori Seiki TL-40 - 1	D6006-129	1	53	0

Part Specifications	
Specifications could not be found.	



Container No: S202441



Part: D212-664-201TRN

Job No: 198233

Serial No/Batch: S202441

Revision: E

Inspector:

Exp Date:

Instructions:

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Plex 7/24/19 8:39 AM Dart.lajeunesse.marie

Date: 08/01/19

⑦

DART AEROSPACE LTD	Work Order:	198233
Description: Crosstube Assembly (205/212 High Aft)	Part Number:	D212-664-241
Inspection Dwg: D212-664-241 Rev: E		Page 1 of 2

FIRST ARTICLE INSPECTION CHECKLIST

	Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	0.200	+/-0.010	.208	✓		CNC-08	
	R0.063	+/-0.010	.063	✓		RG	
	2.990	+0.005/-0.000	2.995	✓		CNC-04	
	5.237	+/-0.030	5.238	✓		CNC-08	
	2.600	+0.005/-0.000	2.605	✓		CNC-04	
	2.686	+0.005/-0.000	2.691	✓			
	2.770	+0.005/-0.000	2.775	✓			
	2.854	+0.005/-0.000	2.859	✓			
	2.938	+0.005/-0.000	2.943	✓			
	3.021	+0.005/-0.000	3.026	✓		CNC-05	
	3.133	+0.005/-0.000	3.138	✓		"	
	3.179	+0.005/-0.000	3.184	✓		"	
SIDE B	0.200	+/-0.010	.198	✓		CNC-08	
	R0.063	+/-0.010	.063	✓		RG	
	2.990	+0.005/-0.000	2.995	✓		CNC-04	
	5.237	+/-0.030	5.248	✓		CNC-08	
	2.600	+0.005/-0.000	2.605	✓		CNC-04	
	2.686	+0.005/-0.000	2.691	✓			
	2.770	+0.005/-0.000	2.775	✓			
	2.854	+0.005/-0.000	2.859	✓			
	2.938	+0.005/-0.000	2.943	✓			
	3.021	+0.005/-0.000	3.026	✓		CNC-05	
	3.133	+0.005/-0.000	3.138	✓		"	
	3.179	+0.005/-0.000	3.184	✓		"	
	124.362	+/-0.020	124.36	✓		Tape	

Item	Qty	Part Number	Description
1	X	D212-884-241	CROSSTUBE ASSEMBLY (205212 HIGH AFT)
2	X	D212-884-241B	CROSSTUBE ASSEMBLY (214 HIGH AFT)
3	1	D6008-128	CROSSTUBE
4	2	D2840-1	SUPPORT
5	4	D3686-083-530	RUBBER CUSHION
6	2	D6018-1	SUPPORT
7	4	MS21920-28	CLAMP (OR MS21920-30)
8	AR	PROSEAL 880 B-2	SEALANT, AMS-S-8802 CLASS B-2

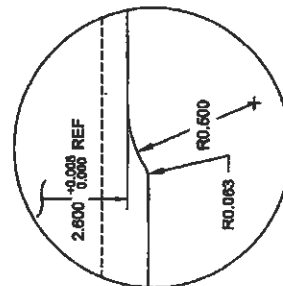
GENERAL NOTES:

- MATERIAL: MANUFACTURED FROM D6008-129
FINISHED LENGTH = 124.362±0.020
- FINISH: a) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
b) PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
c) MASK UNDERSIDE OF CROSSTUBE AS SHOWN (ZN C6-2 / C6-3, HATCHED AREA)
d) PAINT OUTSIDE PER DART QSI 005 4.2
e) REMOVE MASKING AND APPLY MATTE CLEAR COAT
f) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: SCRIBE DART PART NUMBER "D212-884-XXX" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- WEIGHT: D212-884-241B = 44.2 lbs
- PART IS SYMMETRIC ABOUT CENTERLINE
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE
- RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.
- BENDING
11) BEND PROGRESSIVELY WITH A MINIMUM OF 5 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 7.2% (BASED ON O.D.) IN LOWER HALF OF RS5.5 BEND AND 8% (BASED ON O.D.) ON REMAINING TUBE.
12) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- ASSEMBLY
13) INSTALL D2840-1 / D6018-1 SUPPORT. ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 880 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
14) INSTALL MS21920-28 CLAMPS (OR -30) WITH D3686-083-530 RUBBER CUSHIONS TO SECURE THE SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE ON TOP SIDE OF CROSSTUBE.
15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 880 SEALANT HAS CURED FOR 72 HOURS.

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WITHOUT NOTICE
WORK ORDER
19-07-24
19-8233 MWS

RELEASED
R 2014-05-26

E	D212-1 WAS D2840-1 (241B). PROSEAL WAS MAGNABOND. NOTE 2: ADD INSPECTION WINDOW NOTE 11: ALLOW 7.2% CRUSH. NOTE 18: ADD TUBE CURVE AND RETORQUE FOR PROSEAL. ADD SHEET 3: CLAMPS REVERSED TO PREVENT CHIPPING (ZN B7-3, B7-3). BEND HEIGHT TOL. NOW 0.26 WAS 0.13 (C1-4). INCRIP DEC D-1/2	CP	14.04.01
D	REFORMAT/REISSUE GENERAL NOTES/PART LIST: REORGANIZED GENERAL NOTES/PART LIST TO CURRENT STANDARDS. D212-1 (21 D4-2, D4-2S, D4-2S & D4-3). REMOVED REF & ADD TOLERANCES. CS-3 & AS-3: RELOCATED FLAG 48 PER PAR 08 (2) AS-3: MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4	RF	08.08.30
C	REMOVE -1000 ABRASION STRIP: ADD MAGNABOND 8388. CUSHION, REVERSE CLAMPS	PH	07.03.08
B	ADD HOLES FOR COMPATIBILITY WITH BHTAA	PH	05.02.04
A	NEW ISSUE	CP	00.12.12
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	14.04.01		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
REV. E DRAWING NO. D212-884-241 SHEET 1 OF 5 TITLE CROSSTUBE ASSY (205212 HI AFT) SCALE NTS			
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DETAIL F:
CUFF TRANSITION
SCALE 10X

DESIGN	00	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D212-064-241 REV. E SHEET 5 OF 5 TITLE CROSS-TUBE ASSY (205/212 HI AFT) SCALE NTS COPYRIGHT © 2008 BY DART AEROSPACE LTD ALL RIGHTS RESERVED THIS DOCUMENT IS UNCLASSIFIED UNLESS INDICATED OTHERWISE	
DRAWN	00		
CHECKED	00		
MFG. APPR.			
APPROVED			
DATE	14.04.01	DE APPR.	

RELEASED
2014-05-26

Entered: _____ Date: _____

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____		DISPOSITION		DEPARTMENT/PROCESS	
		Rework ☐	Skid-tube ☐	Cross tube ☐	Eng. (Non-AW) ☐
		Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐
		Use-as-is ☐	Large Fab ☐	Finishing ☐	Rec/Store/Packaging ☐
Date: _____		Sequence #: _____		QTY Affected: _____	
Description Work Order Deviation		Disposition			
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY			
		Pressure/Forced ☐	Contamination ☐	Power Loss/Surge ☐	Positioned Wrong ☐
		Bending ☐	Misaligned/off center ☐	Folio/Program ☐	Outside Tolerance ☐
		Crushing ☐	BOM/Route ☐	Grain Direction ☐	Drawing ☐
Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Finish ☐		
Crimp/Kink/Ripple/Wave/Twist ☐	Incomplete/Unclear Instructions ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐		
Marks/Chatter ☐	Drill Holes ☐	Out of Sequence ☐	Misread ☐		
Mislabeled ☐	Fit/Function ☐	Off-set/Set-up ☐			
Other/Details: _____					
		Completed By _____			
		Lead hand / Supervisor _____			
		QC / QA Coordinator _____			
		MRB (QS1042) _____			